DOCUMENT RESUME

ED 129 450 PS 008 873

AUTHOR	Bell, Linda G.; Ericksen, Lena
TITLE	Family Process and Child Development: Some Preliminary Findings.
SPONS AGENCY	National Inst. of Mental Health (DHEW), Rockville, Md.
PUB DATE	Sep 76
GRANT	NIMH-G-R03-MH28190
NOTE	27p.; Paper presented at the Annual Meeting of the American Psychological Association (84th, Washington, D. C., September 3-7, 1976)
EDRS PRICE	MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS	*Adolescents; Emotional Development; Family Characteristics; *Family Environment; *Family Relationship; Family Structure; Females; Group Dynamics; Interaction Process Analysis; *Interpersonal Relationship; Interviews; *Parent Child Relationship; Personality Development; Secondary Education; Social Development; *Sociometric Techniques

ABSTRACT

Relationships between patterns of family interaction and child development are investigated in this study on how family environment and quality of interaction relate to an adolescent's psychological and social functioning. A sample of 99 white middle-class families participated in a 2-hour structured interview in their homes. The interview consisted mainly of revealed difference exercises for parents and for the entire family, and a projective task in which family members described their family system as to: (1) patterns of communication, (2) approach to conflict, (3) degree of individuation, and (4) affective climate. Each family contained an adolescent teenage girl who had previously completed Loevinger's measure of ego development, the California Personality Inventory, and a sociometric questionnaire. This paper presents some preliminary results of the study of 30 families comparing families of the 15 girls who scored highest on the psychological and sociometric measures with families of the 15 girls who scored lowest. Results show that adolescents in the high-scoring group come from families more likely to describe themselves as flexible and trusting in their interpersonal lifestyle. High-scoring adolescents' perceptions of their families tend to be closer to those of their parents than those of low scorers. Differences in the interaction patterns between parents of the two groups suggest that parents of the high scorers may have more functional approaches to problem-solving situations than do parents of low scorers. (Author/BF)

Documents acquired by ERIC include many informal unpublished materials not available from other sources. ERIC makes every effort to obtain the best copy available. Nevertheless, items of marginal reproducibility are often encountered and this affects the quality of the microfiche and hardcopy reproductions ERIC makes available via the ERIC Document Reproduction Service (EDRS). EDRS is not responsible for the quality of the original document. Reproductions supplied by EDRS are the best that can be made from the original.

ED129450

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Family Process and Child Development

Some Preliminary Findings[1]

Linda G. Bell[2] and Lena Ericksen

University of Chicago

PS 008873

Presented at the meeting of the American Psychological Association, September, 1976.

[1]We would like to thank Larry Feldman of The Family Institute of Chicago for critiquing the design of the study. We would also like to thank the following people for their support and assistance: Bertram Cohler, Kathy Dunker, Annette Ward, David Bell, Pat Floerke, and Shiela Platt. This research was supported by National Institute of Mental Health postdoctoral fellowship (F22 MH02761) and research grant (R03 MH28190) to the senior author.

[2]For copies of the manuscript, please write:

Linda Bell
University of Houston at Clear Lake City
2700 Bay Area Boulevard
Houston, Texas 77058

Abstract

Our objective is the investigation of the relationships between patterns of family interaction and child development. To what extent, and in what manner, does the family environment and the quality of family interaction relate to an adolescent's psychological and social functioning. 99 families participated in a 2-hour structured interview in their homes. The interview consisted mainly of revealed difference exercises for parents and for the entire family, and a projective task in which family members described their family system. Each family contained an adolescent teenage girl who had previously completed Loevinger's measure of ego development, and the California Personality Inventory, and a sociometric questionnaire.

This paper presents preliminary results comparing the families of the 15 girls who scored highest on the psychological and sociometric measures with the families of the 15 girls who scored lowest. Adolescents in the high-scoring group (HiSc) come from families more likely to describe themselves as flexible and trusting in their interpersonal lifestyle; HiSc adolescents' perceptions of their family tend to be closer to those of their parents than those of low-scoring (loSc) adolescents and at the same time more balanced, not closer to one or the other parent. Differences in the interaction patterns between parents of the two groups suggest that parents of the HiSc adolescents may have more functional approaches to problem-solving situations than do parents of LoSc adolescents. And data from the projective exercise are supportive of the existance of a higher degree of individuation and autonomy among family members in the HiSc group.

The study of families is a relatively new field in which a great deal of time and money has been invested by researchers of several disciplines. Jacoby (1975), and Riskin and Faunce (1972), and Mishler (1970) provide review of work in this area. Early researchers relied on self-report measures such as survey questionnaires and psychological and psychiatric interviews. Studies during the last 15 years have increasingly employed direct observation of family interaction. Until recently work has focused almost entirely on comparisons between families of schizophrenic or otherwise disturbed children, and "normal" families. Research interest in variations within the group of normal, functioning, or "unlabeled" families is more recent. One example is Raush, Berry, Hertel and Swain (1974), who focus on styles of disagreement and approach to conflict resolution in a longitudinal study of marital couples. Lewis, Beavers, Gossett and Phillips (1976), using global rating scales of family system variables, scales which correlated with both clinical observations and more microanalytic techniques, were able to differentiate optimal from adequate families within their normal group.

Our study also looks at the family as a system, approaching family interaction in terms of (1) patterns of communication, (2) approach to conflict, (3) degree of individuation, and (4) affective climate.

Perhaps a few words are in order here about the systems orientation. Systems theory (Beavers, 1976; Buckley, 1967; Jackson, 1970; Hill, 1970), which is more of a general paradigm or viewpoint that a specific theory, allows one to focus on the family per se as the entity to be studied. The interest of systems-oriented researchers and therapists is the transactions between individuals, the structure and processes of the family--rather than the behavior or personality of individuals. Examples of system variables are "family rule" and "family theme" (Hess and Handel, 1959; Jackson, 1970). Family rules are statements about observed redundancies in relationships; an example of a rule would be "when the people in this family are depressed, one of the children fights with another one." A systems paradigm leads

one to be more concerned with whether the role structure in the family is flexible or rigid--rather than with who plays which role; with whether the distribution of power is democratic or authoritarian--rather than with who is the powerful parent; with the pattern of interaction between parent and child--rather than with how nurturant the parent is. Our research focuses on the marital as well as the family system because the marital system--and the needs of the mates which are not met here--plays an important part in determining the nature of the family system (Vogel and Bell, 1960; Kramer, 1968; Satir, 1967).

Methodology

Between October, 1975 and June, 1976, 99 families participated in a structured 2-hour interview in their homes. The families were selected through the cooperation of local high schools; the area was white, middle class, suburban. We sought a homogeneous population (white, middle class, 2- or 3-child families, with a 15-17 year old girl) in order to minimize extraneous variance. The identified adolescent girl in each family had previously completed Loevinger's sentence completion measure of ego development (Loevinger, 1966; Loevinger and Wessler, 1970), the California Personality Inventory, and a sociometric questionnaire.

Initially, sociometric questionnaires were administered to about 3,500 freshmen and sophomore students in three high schools. (The sociometric measure was completed by boys and girls. It included questions relevant to socioeconomic status, religion, and family structure.) 485 girls from this group were invited to come to after school testing sessions for completion of the Loevinger and CPI measures.[3] These were all girls from 2- or 3-child families, who reported that their parents were not

[3]Due to time limitations, a choice had to be made between giving the entire Loevinger, the entire CPI, or a shortened version of each. It was decided to give a shortened Loevinger (12 items), and the following CPI scales: Sociability, Self Acceptance, Self Control, Good Impression, and Communality.

divorced and that they lived with both parents. 283 girls accepted this invitation, with their's parents permission; they were paid $2 each.

Subjects were excluded from the sample if they scored higher than 31 on the Good Impression scale of the CPI (implying they might have been falsely giving a good impression), or lower than 19 on the Communality scale (implying they may have been answering items randomly); they were also excluded if they had not completed all of the measures. Families in which both parents were foreign-born were also omitted, as well as families in which there had been a divorce, families which had moved from the district or could not be contacted, and families with severe health problems. This left 215 families, of which 99 agreed to be interviewed. Families were contacted first by letter, then by phone; the person making the telephone contacts was not an interviewer; she knew nothing about the status of the adolescent and little about the specific goals of the study. Families who declined the interview usually gave lack of time or a concern for maintaining their privacy as reasons.

Characteristics of the interviewed families are shown in Table 1. There were no significant differences in the group of families which declined the interview, compared with the group which accepted, in age, father's education, mother's education, number of children in the family, religion, or position of the identified adolescent (oldest, middle, or youngest). There was a difference in the functioning of the identified adolescent, as measured by the psychological and sociometric tests. Families who declined had, on the average, adolescents who scored less well on a summary score of these measures ($t=2.30$, $df=216$; $p < .03$, 2-tailed test).[4]

---

[4]The summary score is discussed in the results section; df=216 as three families had two adolescents who had completed the individual measures.

Table 1

Characteristics of the Families which were Interviewed

Age of the identified adolescent: 15-17 years, Mean = 16 years

Education of parents:

	Father	Mother
Grade school, or some high school	7%	3%
Finished high school	24%	49%
College, business or trade school	28%	30%
Finished college	25%	16%
Post graduate study	16%	2%

Religion:

Protestant	53%
Catholic	37%
Other	10%

Position of identified adolescent:

Oldest	63%
Middle	19%
Youngest	18%

94% of the Mothers and 99% of the Fathers were born in the United States

Structured Interview

The 2-hour structured interview was held in the family's home and, except for one 20-minute husband-wife segment, involved the entire family. The interviewer had not seen or talked with the family prior to the interview and knew nothing of the identified adolescent's scoring on the psychological and sociometric measures.

After the family members had given their written permission for the interview, they completed a 63-item True-False questionnaire about their family. This questionnaire was a shortened version of the Moos Family Environment Scale, one of a group of environment description scales developed by Moos and his colleagues at the Social Ecology Laboratory, Stanford University. The questionnaire provided the basis for revealed differences exercises (Strodtbeck, 1951,1954), the first for the mates, the second, for the family as a whole. In this exercise, people were asked to consider items on the questionnaire on which they disagreed, and to try to reach a consensus. They were given 6-10 slips of paper in an envelope. Each piece of paper listed an item from the questionnaire and the answers of each mate (or each family member). They were asked to discuss the item and try to reach an agreement, then mark whether the agreement was True or False—or that they still did not agree. Twenty minutes were available for each revealed differences exercise.

The family was also asked to describe the family using a semi-projective exercise, Paper Sculpting, a technique developed by Linda Bell. People were asked to arrange colored circles (for people), red and black stripes (for similarity and dissimilarity between people) and blue yarn circles (boundary markers) on a white board in a way which represents the family. The instructions were as follows:

A Family Picture

Use these materials to describe your family.

The circles are for people, the red and black strips are to show a relationship between two people: (1) red is to show that people are similar in some way; (2) black is to show that people are different.

The blue yarn circles are "boundary markers." They are for showing a person who is somehow separate, or a pair or a group of people who belong together. A boundary around one person may be used to show that he keeps to himself a lot, for instance. Or a boundary could be used to show that two people have something special going between them--something that others in the family are not a part of.

Choose a circle for each family member. Place them on the board anyway you wish. Use the red and black strips and the blue boundary markers any way that feels right to you in order to describe your family. You may choose NOT to use them at all.

You may wish to include on the board relatives or close friends of any or all of you.

The only rule is that you are not to write on the board. Work at your "picture" until it feels right. There is no right or wrong way to do this.

Do it as a group. We want your combined picture of your family.

While the interviewer was setting up the revealed differences exercises, parents completed an 18-item Loevenger sentence completion measure of ego development, children completed Rotter's (1966)measure of Internal vs External control, and all family members completed a measure of positive and negative affect adapted from Bradburn (1969). At the completion of the interview, family members were asked to describe their family in terms of their communication processes and expression of feelings, on scales taken from Feldman (1975).

The interview was tape-recorded and the Paper Sculpting exercise was photographed. At the completion of the interview, the interviewer discussed with the family feelings and questions they had concerning the interview and the research.

Reactions to the Interview

In June all families were mailed a follow-up questionnaire, concerning the effect an interview of this kind might have on a family and the effect they felt it had on their family. 42 families returned the questionnaire by mail; 66 were contacted by phone. We were unable to reach 1 family. Families were asked one question about benefits of the interview, one about harmful effects. The questions were worded: "In your best judgement, was participation in the interview in any way beneficial (harmful) or good (bad) for your family--or for any individual in the

family?" They answered first on a 5-point scale (Not Beneficial, Slightly Beneficial, Very Beneficial, Extremely Beneficial), then wrote comments. 24% said the interview was not beneficial; 18% said that it was slightly beneficial; 51%, beneficial; 5%, very beneficial; and 2%, extremely beneficial. The written comments stressed that the family had all been together--a rare experience for many of these families, that individuals had learned about the ideas and feelings of others which they would not have done otherwise, and that they talked about things they hadn't talked about before.

To the question about harmful effects, all families rated that the interview was Not Harmful; there were no comments.

Results

Following a factor analysis of the individual psychological variables, four scales were devised for each adolescent: ego development (Loevinger), sociometric (popularity and mutuality of choices), self acceptance and sociability (CPI), socialization and self control (CPI). A gross measure of adolescent functioning was achieved by summing the adolescent's standard scores on these four individual scales. This paper reports a preliminary data analysis focusing on the families of the 15 girls who scored in the top 10% on this gross measure and those of the girls scoring in the bottom 10%. The families will be referred to, respectively, as the high-scoring group (HiSc) and the low-scoring group (LoSc). There were no significant differences between these two groups in age of identified adolescent, number of children in the family, religion, or position of the identified adolescent. They did differ in father's education; fathers in the HiSc group were better educated ($Chi\text{-}Sc = 9.98$, $df=4$; $p < .05$). No families reported any trouble with the law or difficulties with either alcohol or drugs (except for one alcoholic grandfather). Two parents reported past individual psychotherapy (one in the HiSc group, one LoSc). Two children, both in the HiSc group, sibs of identified adolescents, were reported as having had therapy—one for a learning disability, one for a behavior problem.

The first interviewer interviewed 9 families in each group; the second interviewer interviewed 6 families in each group.

It must be stressed that many analyses and comparisons are yet to be done and these results should be considered preliminary. We will report data from the Moos Family Environment Scale, the interaction between the parents during the Marital Revealed Difference, and the Paper Sculpture.

How the Families see themselves

Differences in how family members described themselves on the Moos Family Environment Scale are presented in Table 2. The major theme differentiating the two groups seems to be one of control. The item generating the largest difference between the two groups was: "'work before play' is the rule in our family." 83% of the people in the LoSc group answered True, 45% answered true in the HiSc group. These differences in self descriptions are consistent with what Beavers (1976) describes as differences between midrange and optimum families. Midrange families, those functioning at a less than optimum level, have a clear, but rigid structure. Control is a major concern in these families as family members mistrust feelings and drives.

Lopsided triangles

Focusing on disagreements among family members, we were interested in two things: (1) the amount of disagreement among family members on the Moos questionnaire and (2) the pattern of that disagreement. Clinical experience suggests that it is the pattern rather than the amount of disagreement that is important. Specifically, that in families experiencing difficulties, one often finds coalitions between parent and child against the other parent. This is in contrast to clear parental coalitions exercising the leadership in healthier families. (See Lewis et al., 1976; Haley, 1967.)

Table 2

Items on the Moos Family Environment Scale on which members of HiSc families differed significantly ($p < .05$, two-tailed test) from members of LoSc families*

Percent of Family Members Marking TRUE		Item
HiSc	LoSc	
54	22	We come and go as we want to in our family.
65	40	There are very few rules to follow in our family.
64	40	We say anything we want to around home.
53	33	Family members are rarely ordered around.
67	48	Money and paying bills is openly talked about in our family.
90	74	Family members really back each other up.
92	79	There is a feeling of togetherness in our family.
98	88	Family members really help and support one another.
45	83	"Work before play" is the rule in our family.
31	61	We rarely volunteer when something has to be done at home.
45	73	You can't get away with much in our family.
45	69	Each person's duties are clearly defined in our family.
42	64	Activities in our family are pretty carefully planned.
38	57	Family members make sure their rooms are neat.
15	34	Family members sometimes get so angry they throw things.
56	75	It's hard to "blow off steam" at home without upsetting somebody.
56	74	There are set ways of doing things at home.
33	51	Family members sometimes hit each other.
65	82	Being on time is very important in our family.
67	83	Dishes are usually done immediately after eating.

*There were a total of 63 items on the questionnaire.

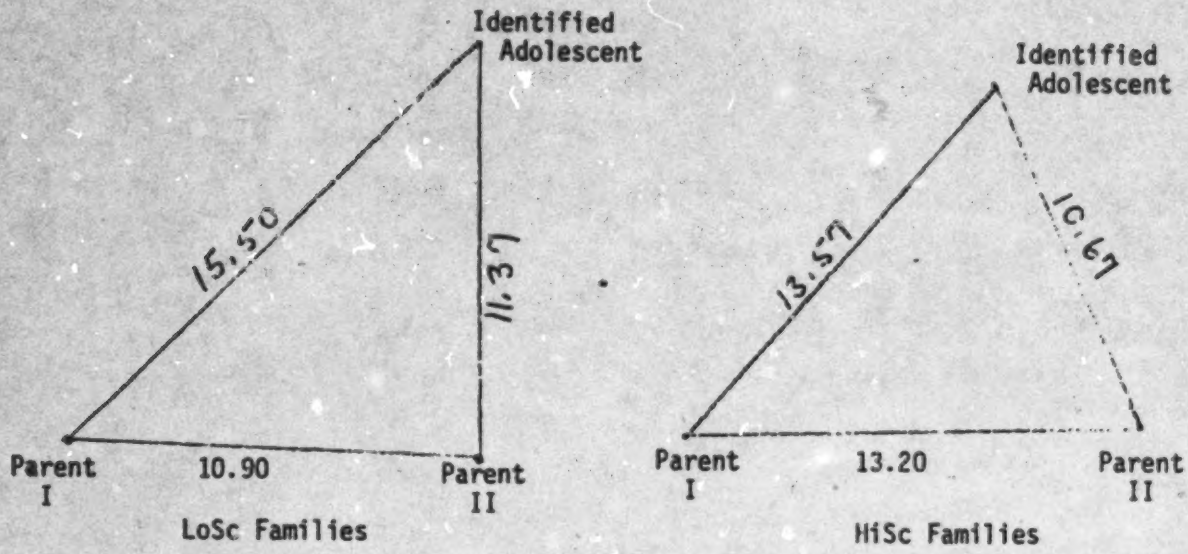
As far as amount of disagreement is concerned, there is no significant difference between the two groups of families. There is, however, a difference in the pattern of that disagreement when we focus on the relationship between the parents and the relationship between each parent and the identified adolescent. This pattern difference is shown in Table 3. A degree-of-disagreement score was calculated for each relationship by summing the difference scores (absolute value of Person 1's score minus Person 2's score) on 7 scales of the Moos.[5] Using the marital difference score as the base and each parent-adolescent difference score as a side, triangles were drawn depicting the pattern of disagreement in each family. There was no significant difference between the two groups in the amount of marital disagreement. There was, however, a difference in the pattern of disagreement between parents and adolescent. The triangles of the LoSc families are more lopsided, the adolescent seeming to lean more toward one parent. 53% of the triangles in the LoSc group were lopsided to the point of having one base angle which was obtuse (greater than 90 degrees); only 20% of the HiSc group's triangles had an obtuse base angle. This lopsidedness was a function of the greater distance of the adolescent from the parents in the LoSc group, as well as the greater difference between the distance from one parent and the distance from the other. If we use the marital disagreement score as a baseline for the family, the total distance from parents relative to this baseline is greater for adolescents in the LoSc group than in the HiSc group ($t=2.33$, $df=28$, $p < .05$, 2-tailed test). The difference between the two adolescent parent disagreement scores, relative to the baseline, is also greater for the LoSc group ($t=1.73$, $df=28$, $p < .10$, 2-tailed test).

---

[5]The 63-item questionnaire consisted of 7 9-item scales; scores on each scale could range from 0 to 9.

Table 3

Patterns of Disagreement in LoSc and HiSc Families



Number of Triangles With one Obtuse Base Angle:

	Yes	No
LoSc	8	7
HiSc	3	12

$\chi^2 = 3.60$ df=1
$p \approx .06$, 2-tailedtest

Distance From Parents: Adolescent/Parent I + Adolescent Parent II / Parent I/Parent II

	Mean	s
LoSc	2.95	1.8
HiSc	1.81	0.5

$t = 2.33$, df=28
$p < .05$, 2-tailed test

Relative Distance from Parents: Adolescent/Parent I - Adolescent/Parent II / Parent I/Parent II

	Mean	s
LoSc	.39	.3
HiSc	.23	.2

$t = 1.73$, df=28
$p < .10$, 2-tailed test

There is evidence, then for a more distant and less balanced relationship between adolescents and their parents in the LoSc group. In both groups, adolescents are equally likely to "lean" toward father or mother.

Marital interaction patterns

A michroanalysis of the interaction between the parents during their revealed difference exercise has been completed for the 30 families. Transcripts were first typed, then numbered by phrases, then scored. At all times the person working with the transcripts did not know to which group the family belonged.[6] We developed our codeing scheme using Raush et al.'s (1974) scheme as a starting point. Our scheme has five basic categories: (1) Focus on the task: problem-solving statements with neutral affect: (2) Focus on the relationship-positive statements toward the other, supportive or conciliatory; (3) Focus on the relationship-negative statements toward the other; (4) Protective statements--implying a danger of invalidation; attempts to protect self or the relationship; (5) Invalidating statements--depreciating the other's definition of the situation or of himself. Some examples of statements in each category are given in Table 4.

The five codeing categories are ordered according to their relative appropriateness to a problem-solving situation such as a revealed difference exercise, and inversely according to their importance or priority in the maintenance of a relationship. In other words, the most basic question for the relationship is whether or not the people involved validate each other's perceptions of self and of the relationship. Of secondary priority is the question of affect--is the nature of the relationship supportive or desparaging, warm or hostile. It is our assumption that only when these issues have been resolved can the people involved in the

---

[6]It took about 10 hours to process one 12-minute husband-wife dialogue, the time being divided equally between typing the transcript, checking it and numbering the phrases, and codeing.

Table 4

Examples from Interaction Scoring Scheme

(1) FOCUS ON THE TASK. These are problem-solving statements with neutral affect. They are content and information heavy.

opening or closing the issue--e.g. reading the item to be discussed

seeking information--attempting to elicit factual information

"What does it say"

giving information--stating opinion or own feelings

"I said 'true' and you said 'false'"
"I don't enjoy this"
"Jenny came in late just last night"

returning focus of conversation to the issue at hand

suggesting a course of action

(2) FOCUS ON THE RELATIONSHIP: POSITIVE statements toward the other, supportive or conciliatory.

humor

warm laughter

showing concern for the other's feelings; offering reassurance or support

"I think you're doing a good job"

accepting the other's plans, actions, ideas, motives, or feelings

"That's a good idea"
"I agree with you on that"

(3) FOCUS ON THE RELATIONSHIP: NEGATIVE statements toward the other.

telling the other what to do

"go on to the next one"
"circle it'true'"

trying to force the other to agree

disagreeing with or denying the validity of the other's opinions or feelings; disparaging the other

"No we don't"
"But Sally <u>does</u> do the dishes"

agreement with negative affect, e.g. giving in with negative feeling overtones

"O.K., O.K., mark it true" (sarcastic tone)
"right, we never fight" (tone implying the opposite)

using an outside power to induce or force the other to agree

"She said to do it this way"

(4) PROTECTIVE: statements implying a danger of invalidation--attempts to protect the relationship or to hold things together.

direct validation of the relationship

"that was easy for us"

continuing or repeating own statements (usually after interruption) even though little or no new information is given

overt or covert denial of disagreement

"We don't really disagree"
"I meant to say 'false'"

agreeing with the other without presenting reason for own answer

"It's all a matter of interpretation"
"I didn't make up these questions"

anxious laughter

direct self validation

"That's the way I took it" (without giving any factual information)

(5) INVALIDATING: depreciating other's definition of the situation or of himself.

leaving sentence hanging, unfinished (as if expecting other to read one's mind)

"I would agree that....."

redundancy: repeating what the other has just said

changing the subject when a response is called for

cutting the other off; interrupting before his idea was clear

silence or evasiveness when a response is called for

"I don't know" in response to "What do you think?"

unclear communication--could be taken several ways and hearer can't be sure of intent or thrust

relationship work constructively and efficiently on a reality-based task. Otherwise, as Raush et al. note (1972, p. 202) discussions of disagreement in viewpoint quickly convert to struggles over more basic issues. This ordering of the categories is also consistent with Watzlawick, Beavin and Jackson's observation that in healthier relationships, the relationship aspect of the communication recedes into the background, whereas in less healthy relationships there is a constant struggle about the nature of the relationship, with the content aspect of the communication being relatively unimportant (1967, p. 52).

In this scheme, all task oriented and relationship statements (positive and negative) are considered to be validating; they imply a confirmation of the other persons' definition and perception of himself. Invalidating messages manifest a nonresponsiveness to, or lack of awareness of, the person as he presents himself. As Watzlawick, Beavin and Jackson (1967) explain it, rejection communicates "You are wrong;" disconfirmation or invalidation communicates "You do not exist."

Scoring. Each of us scored 18 of the 30 transcripts, using both tape and transcript, giving one or more codes to each phrase. For purposes of checking reliability, if more than one code was used, the code with the highest number (1,2,3,4, or 5) was considered the code for each phrase. Phrase-by-phrase reliabilities on the 6 protocals we scored in common had a median of .69 (actual reliabilities were .55, .68, .69, .69, .70, and .73).

Based on our assumption of the relative importance of each of the five categories, one score was arrived at for each speech, a speech being an uninterrupted series of phrases by one person. That score was the highest numbered score given any phrase in the speech. This is based on the assumption that in responding to a speech, a person will be most likely to respond to that aspect of the speech which is the most basic for the relationship. Problem-solving or relationship statements would be ignored, in other words, if the speech contained an invalidating message. Likewise, positive or negative messages about the relationship would be given

priority over task-oriented messages. This scoring method allowed us to make contingency tables (see Raush, 1972) and to look at the pattern of the interaction--i.e., the kind of response given to each kind of statement.

Results. Tables 5 and 6 summarize the interaction patterns for the two groups of couples. The contingency tables in Table 5 show probability of each statement-response sequence as given by the percent of statements falling into each cell of the matrix; i.e. for the HiSc Group 32.4% of the statements were 1s in response to the mate's previous 1 statement, 6.0% were 2s in response to the mate's previous 1 statement. The contingency tables in Table 6 give the probability of each response given each statement, i.e. in Table 6 each row totals 100% where as in Table 5, the entire table totals 100%.

There were no differences in how long couples in each group spent on the task, the number of phrases, or in the number of phrases per speech.

There are basically no differences between the two groups in the percent of statements which fall into each category (Table 5). There is a clear pattern of differences between the groups in the probability of each response following each statement. These differences can be most easily studied in Table 6.

Couples in the HiSc group were more likely to respond to positive statements with positive statements, less likely to respond to negative statements with protective statements. In response to protective statements, they were less likely to be protective in return. In response to invalidating statements, they were more likely to be protective or respond negatively, and less likely to respond with task oriented or positive statements. It could be argued that to respond to invalidation with positive or task oriented statements is in itself invalidating, implying that the invalidation had not been perceived.

Caution must be urged, however, against generalizing from these results. Variance within the two groups is large relative to the size of their differences and simple cell-by-cell comparisons between the two groups result in no more

Table 5

Summary of Husband-Wife Interaction

Percent of total speeches scored in each category:

	1 Task	2 Positive	3 Negative	4 Protective	5 Invalidating
HiSc	53.5	13.9	11.6	13.7	7.3
LoSc	55.1	11.8	10.5	16.1	6.6

Contingency tables+ for each group of couples:

HiSc Group

Statement \ Response	1	2	3	4	5
1	32.4	6.0	5.2	7.2	3.1
2	6.5	4.4	0.8	1.7	0.8
3	4.7	0.8	3.4	1.5	1.3
4	6.1	2.5	1.6	2.0	0.9
5	3.3	0.5	1.2	1.5	1.3

LoSc Group

Statement \ Response	1	2	3	4	5
1	33.1	6.5	4.9	7.6	3.9
2	6.2	2.9	0.7	1.4	0.7
3	4.5	0.5	3.4	1.9	0.8
4	6.5	2.1	0.8	4.1	0.6
5	3.7	0.9	0.5	1.0	1.0

Difference between the groups:
HiSc Group minus LoSc Group

Statement \ Response	1	2	3	4	5
1	-0.7	-0.5	0.3	-0.4	-0.8
2	0.3	1.5	0.1	0.3	0.1
3	0.2	0.3	0.0	-0.4	0.5
4	-0.4	0.4	0.8	-2.1*	0.3
5	-0.4	-0.4	0.7*	0.5	0.3

+In creating the contingency tables, discussion of each questionnaire item was considered as a unit. I.e., if the couple discussed 8 items, there would be 8 statements (the first for each item) which show up in the tables only as statement, and 8 (the last for each item) which show up only as response.

*$p < .10$ for a 2-tailed test comparing the two groups for this cell

Table 6

Interaction Data Summarized as Probability of Each Response Given Each Statement

Statement	Response 1	2	3	4	5
1	57.1	11.5	11.8	13.3	6.3
2	46.7	28.4	6.6	11.2	6.9
3	40.1	8.4	23.1	14.2	13.9
4	43.3	20.1	14.0	14.7	7.9
5	40.8	7.7	15.2	26.0	10.3

HiSc Group

Statement	Response 1	2	3	4	5
1	56.9	11.3	10.9	13.8	7.1
2	48.9	19.9	10.1	14.7	6.1
3	41.9	3.9	19.5	22.9	11.8
4	48.9	14.5	9.2	23.5	3.9
5	48.5	15.2	5.9	18.0	12.5

LoSc Group

Statement	Response 1	2	3	4	5
1	0.2	0.2	0.9	-0.5	-0.8
2	-2.2	8.5	-3.5	-3.5	0.8
3	-1.8	4.5	3.6	-8.7	2.1
4	-5.6	5.6	4.8	-8.8*	4.0
5	-7.7	-7.5	9.3**	8.0	-2.2

Difference between the groups:
HiSc Group minus LoSc Group

*p < .10, 2-tailed test

**p < .05, 2-tailed test

significant differences than would be expected by chance. More complex analyses have not yet been completed.

Two other analyses were done based on the interaction data. One compared the two groups on relative dominance of husbands and wives; the other compared the two groups on degree of difference between husbands and wives in their interaction style. For the first comparison we looked at the percent of phrases spoken by each mate. In the HiSc group, 54% of the phrases were the husband's, 46% the wife's; in the LoSc group, the percentages were husband 49%, wife 51%. The difference between the HiSc and LoSc groups was significant at the .05 level (t=2.23, df=28, 2-tailed test). This is consistent with Beaver's observation that in capable, middle-class families, the leadership is generally in the hands of the husband (1976, p. 56). Hopefully, this is a culture-based phenomenon!

Haley (1964) and Waxler and Mishler (1975) found that healthier families had more flexible interaction patterns in terms of who-follows-whom in the speaking sequence. What about the style of that interaction, in terms of how task-oriented, positive, negative, etc. each mate is? We expected that healthier families would be more flexibility here, too, in that each mate would be free to manifest a wide variety of behaviors. What we found was that in the LoSc couples, mates tended to be very similar to each other or very different from each other; with the HiSc couples falling in between these two extremes. The measure we used was to sum across the five categories the absolute value of the Husband-minus-Wife scores for total number of statements in the category, then divide this difference by the total number of statements in the protocal. Finding a mean and standard deviation for the entire group of 30 couples, we counted the number of couples in each condition (HiSc and LoSc) whose scores were greater or less than 1 standard deviation from the overall mean. In the HiSc group there was 1 couple whose score was less than 1 S.D. from the mean and none higher. In the LoSc group, 7 couples were extreme, 3 low and 4 high. This difference is significant at the .05 level (Chi-Sq=6.64, df=1,

2-tailed test). These data suggest that too much similarity in style may be as much a sign of rigidity as too little. One extreme may imply a stifling of individual differences; the other, rigid complementarity. In some areas, the golden mean may signify greatest health.

Individuation and Paper Sculpture

Reiss (1971) discusses consensus sensitive versus interpersonal distance sensitive families; Wynne et al. (1958), pseudomutuality; (Bowen (1960, undifferentiated ego mass; Hess and Handel (1959), separateness versus connectedness. All of these concepts concern the autonomy or individuation of family members. Minuchen (1974) describes families as enmeshed, having clear boundaries, or disengaged. Enmeshed families are characterized by diffuse individual boundaries, increased communication and concern. Disengaged families have inappropriately rigid ego boundaries with little communication across subsystems. Health families fall between the two, having clear boundaries. They also have the ability, it seems, to be close without fear that they can never again be separate, and separate, without fear of losing the possibility of closeness. The issue of individuation is central to personal functioning in any relationship; the individual must be able to assume a functioning, contributing role in various interpersonal systems, without losing a sense of separate identity.

Our expectation was that families of LoSc adolescents would more likely be disengaged or enmeshed relative to those of HiSc adolescents. The Paper Sculpting exercise was aimed at exploring this hypothesis. Distance between the circles (representing family members) was expected to reflect how family members felt about closeness. It was expected that families in the LoSc group would more likely be extreme, placing representations of themselves very close together or very distant. It was also expected that families of LoSc groups would be more likely to use more than one circle to represent one individual as this had been observed with families in therapy considered to have individuals with diffuse identities. Thirdly, it was

expected that families of LoSc adolescents would be more likely to place a boundary around the family but not individuals within the family or vice versa, to use individual or subgroup boundaries without a family boundary. The first two hypotheses were supported; the third was not.

Taking the average distance between family members as a score for each family, degree of closeness was averaged for the group of 30 families. Families scoring more or less than one standard deviation from that overall mean were noted. As expected, there were more families with extreme scores (5 close, 4 distant) in the LoSc group than in the HiSc group (2 close, 1 distant). This difference is significant at the .05 level (Chi-Sq.=7.34 df=2, 2-tailed test).

Six of the families in the LoSc group used more than one circle to represent a person, 2 of the families in the HISc group did (Chi-Sq.=2.72, df=1; $p < .10$, 2-tailed test).

It was also the case that families in the LoSc group were more likely to leave relationships between people undescribed, i.e. without black or red lines to represent similarity or difference (Chi-Sq.=3.88, df=1; $p < .05$, 2-tailed test). And the proportion of similarity to disssimilarity (number-of-red-lines/number-of-black between family members) was higher for the HiSc group ($t=4.82$, df-28; $p < .05$, 2-tailed test).

Discussion

Analyses to date suggest that there are meaningful differences in family structure and family interaction process for the two groups of adolescents. Adolescents in the HiSc group come from families who are more likely to describe themselves as flexible and trusting in their lifestyle; the HiSc adolescent's perceptions of their family tend to be closer to those of their parents and at the same time more balanced, not closer to one or the other parent. Differences in the interaction patterns between parents of the two groups suggest that parents of HiSc adolescents may have more functional approaches to problem-solving situations than do parents of the LoSc adolescents. And data from the Paper Sculpture are supportive of a higher degree of individuation and autonomy among family members in the HiSc group.

We are only at the beginning stage of analyzing the available data. Only 30 of the 99 families have been studied, and analysis of the data from those 30 families is incomplete. The interaction during the family revealed difference exercise is yet to be scored; these data, of course, are extremely important for understanding the adolescent's family environment and her specific role in the family system. It is also important, before drawing conclusions about the importance of specific family system variables to study the entire range of families in the sample--in order to understand interactions among the various family variables thought to be contributing to adolescent functioning.

References

Bradburn, Norman, The Structure of Psychological Well-being. Aldine, Chicago, 1969.

Beavers, W. Robert, A Theoretical basis for family evaluation, in Lewis, J., W. R. Beavers, J.T. Gossett, and V.A. Phillips, No Single Thread, Brunner/Mazel, New York, 1976.

Bowen, Murray A. Family concept of schizophrenia. In D.D. Jackson (Ed.), The Etiology of Schizophrenia. Basic Books, 1960, 346-372.

Buckley, Walter. Sociology and Modern Systems Theory. Prentice-Hall, 1967.

Feldman, Larry B. Unpublished research proposal. The Family Institute of Chicago, 1975.

Haley, Jay, Toward a theory of pathogenic systems, in Gerold Zuk and Ivan Boszormenji-Nagy (Eds.), Family Therapy and Disturbed Families. Science and Behavior Books, pp 11-27, 1967.

Haley, Jay, Research on family patterns: An instrument measurement. Family Process, 1964, 3, 41-65.

Hess, Robert D. and Gerald Handel. Family Worlds. University of Chicago Press, 1959.

Hill, Reuben. Modern systems theory and the family: a confrontation. Lecture presented at the ceremonies confirming the degree of Doctor Honoris Causa by the Facultat der Economische en Sociale Wetenschappen der Katholicke Universiteit te Leuven, Leuven, Belgium, December, 1970.

Jackson, Don D. The study of the family. In N.W. Ackerman (Ed.,), Family Process. Basic Books, 1970, 111-130.

Jacob, Theodore. Family interaction in disturbed and normal families: a methodological and substantive review. Psychological Bulletin, 1975, 82, 33-65.

Kramer, Charles H., R.L. Phillips, S.A. Schmidt, and J. Gibson. Beginning Phase of Family Treatment. Kramer Foundation, 1968.

Lewis, Jerry, W. Robert Beavers, J.T. Gossett, and V.A. Phillips, No Single Thread, Brunner/Mazel, New York, 1976.

Loevinger, Jane. Meaning and measurement of ego development. American Psychologist, 1966, 21, 195-206.

Loevinger, J. and R. Wessler. Measuring Ego Development I: Construction and Use of a Sentence Completion Test. Jossey-Bass, 1970.

Loevinger, J., R. Wessler, and C. Redmore. Measuring Ego Development II: Scoring Manual for Women and Girls. Jossey-Bass, 1970.

Mishler, Elliot and Nancy Waxler. The sequential patterning of interaction in normal and schizophrenic families. Family Process, 1975, 14, 17-50.

Minuchin, Salvador. Families and Family Therapy. Harvard University Press, 1974.

Raush, H. L. Process and change--a Markov model for interaction. Family Process, 1972, 11, 275-298.

Raush, H.L., W.A. Barry, R.K. Hertel, and M.A. Swain. Communication, Conflict and Marriage. Jossey-Bass, 1974.

Reiss, David. Varieties of consensual experience, I. A theory for relating family interaction to individual thinking. Family Process, 1971, 10.

Riskin, J. M. and E. Faunce. An evaluative review of family interaction research. Family Process, 1972, 11, 365-455.

Rotter, J.B. Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 1966, 80.

Satir, Virginia. Conjoint Family Therapy. Science and Behavior Books, Inc., 1967.

Strodtbeck, Fred L. Husband-wife interaction over revealed differences. American Sociological Review, 1959, 16, 468-473.

Strodtbeck, Fred L. The family as a three-person group. American Sociological Review, 1954, 19, 23-29.

Vogel, Ezra F. and Norman W. Bell. The emotionally disturbed child as the family scapegoat. In N.W. Bell and E.F. Vogel (eds.), A Modern Introduction to the Family. The Free Press, 1960, 412-427.

Watzlawick, Paul, J.H. Beavin, and D.D. Jackson, Pragmatics of Human Communication. Norton, New York, 1967.

Waxler, N. and E. Mishler. Experimental studies of families. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology, Vol. 5. Academic Press, 1970.

Wynne, L.C., Ryckoff, I.M., Day, J., and Hirsch, S.L., Pseudo-mutuality in the family relations of schizophrenics, Psychiatry, 21, 205-220, 1958.